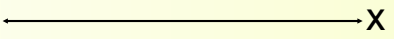
Alg. 2 Warm Up #1-1

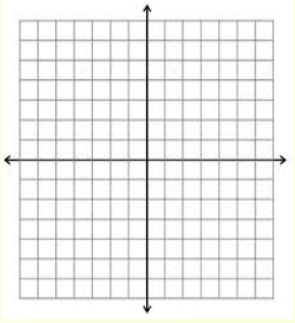
Warm Up sheets by the door.

1. Solve:
$x^2 + 2x - 3 = 0$

2. Solve and represent solution on a number line:
$x^2 + 2x - 3 < 0$



3. Graph: $y < x^2 + 2x - 3$



Review of Quadratic Inequalities

Solve in one variable: Find the x values that make the inequality true. (Like #2 from the warm up.)

* Find critical numbers (boundary points) where the equation = 0.

* Plot the critical numbers on a number line dividing the number line into sections.

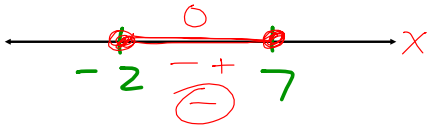
* Test a number in each section to find where the inequality is true.

Examples:

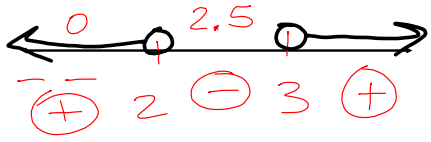
1) $(x - 7)(x + 2) \leq 0$

2) $x^2 - 5x + 6 > 0$

$(x-3)(x-2)>0$



$-2 \leq x \leq 7$



$x < 2$ OR $x > 3$

Linear and Quadratic Inequalities in x and y: Find the (x, y) coordinate pairs that make the inequality true. The solution will be a shaded region in the coordinate plane that may or may not include the boundary line or parabola.

* Graph the line or parabola; consider if it should be solid or dashed.

* Test a point (x, y) clearly not on the line or parabola to see if it makes the inequality true.

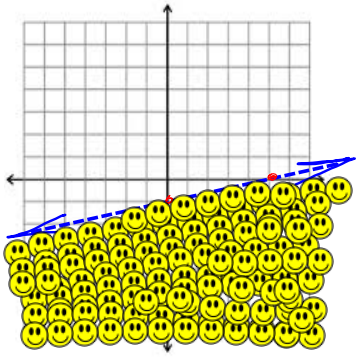
* Shade the solution region, where the inequality is true.

Examples:

1) $x - 5y > 5$

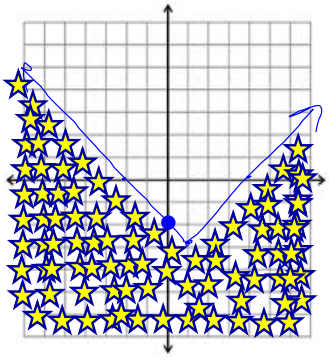
$0 - 5(0) \stackrel{?}{>} 5$

$0 \stackrel{?}{>} 5$



2) $y \leq |x - 1| - 3$

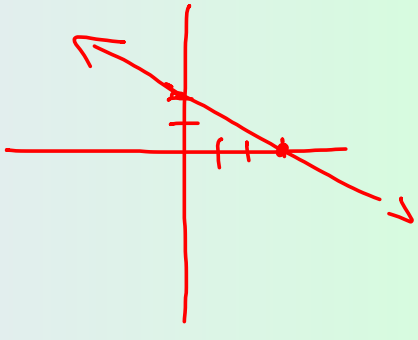
R + 1 down 3



*Use quick graphing skills to accurately graph the boundary line or parabola.

$y = (x - h)^2 + k$	vertex at (h, k)
$y = (x - a)(x - b)$	x-int: (a, 0) & (b, 0)
$y = mx + b$	y-int: (0, b); m = slope
$Ax + By = C$	plot x & y intercepts

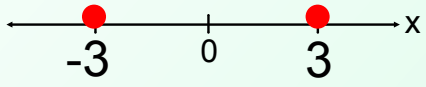
Ex: $2x + 3y = 6$



Review Absolute Value:

Using the definition of absolute value as the distance from zero on the real number line:

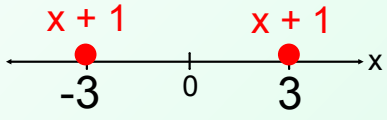
$|x| = 3$ means that the value of x is 3 units from zero on the number line



$x = -3$ or $x = 3$

** Never +, -, x, or ÷, into or out of an absolute value symbol!!

$|x + 1| = 3$ means that the value of $x + 1$ is 3 units from zero on the number line



$x + 1 = -3$ or $x + 1 = 3$

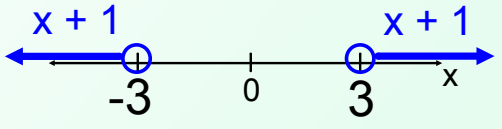
$x = -4$ or $x = 2$

$x = -4, 2$

** Never +, -, x, or ÷, into or out of an absolute value symbol!!

$|x + 1| > 3$

means that the value of x + 1 is more than 3 units from zero on the number line

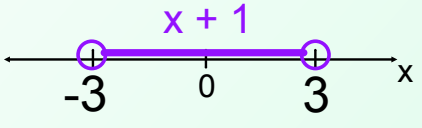


$x + 1 < -3$ or $x + 1 > 3$

** Never +, -, x, or ÷, into or out of an absolute value symbol!!

$|x + 1| < 3$

means that the value of x + 1 is less than 3 units from zero on the number line



$-3 < x + 1 < 3$

Classwork: Graphing Inequalities (Yellow)

* Use quick graphing strategies and draw accurate graphs using the entire coordinate plane provided.

* At least 3 - 5 points for parabolas including the vertex.

* Use a straightedge for lines.

How many points are needed to graph an accurate line?

Alg 2 ebook:

http://enroll.cpm.org

Your website:

Go to South web page,

Faculty Sites, Math,

Nicholson

HW: Ch 4 homework WS #1 (Tan)

Get a book by tomorrow!

Core Connections
Algebra 2, Volume **One**

* First Short Quiz: Friday

Includes: Solving a quadratic inequality and an absolute value inequality